

ENGLISH ENGINEERING INC.

SAFETY ENGINEERING • HUMAN FACTORS/ERGONOMICS • SAFETY MANAGEMENT

JASON T. ENGLISH, M.S., CSP, P.E.

February 2, 2014

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Re: Harold A. Pierce, Jr. vs. Basic Industries, Ltd. and San Miguel Electrical Cooperative, Inc.

This report summarizes my preliminary findings to date regarding the analysis of a injury event occurring to Mr. Harold A. Pierce, Jr., specifically outlining the primary causative factors, and addressing the associated responsibility of Basic Industries, Ltd. and San Miguel Electrical Cooperative, Inc. regarding the injury event. Within this report, "*Basic Industries*" refers to Basic Industries, Ltd. and "*SMEC*" refers to San Miguel Electrical Cooperative, Inc.

In my evaluation and analysis of this incident, I utilized standard accident investigation methodology in accordance with that published in numerous publications of the National Safety Council and other authoritative published literature, along with standards published by ASTM International, specifically those produced by the ASTM committee E30 on Forensic Sciences, and those published and currently under development by the ASTM committee E58 on Forensic Engineering. ASTM International, formerly known as the American Society of Testing & Materials (ASTM), is a globally recognized leader in the development and delivery of international voluntary consensus standards.

Generally, such methodology includes (a) the review of any physical evidence (equipment, facilities, site locations), including photographs, drawings, and verbal or written descriptions of such physical evidence, (b) any necessary relevant testing to be conducted in regard to such physical evidence, (c) the review of available relevant documents, such as witness accounts (interviews, deposition testimony, statements, etc.), accident reports, safety manuals, equipment manuals, etc., and any additional relevant information available to assist in establishing facts surrounding an event, (d) the review of applicable codes, standards, regulations, authoritative guidelines, and good practice, and (e) the application of such authoritative information, along with my own extensive education, training, and experience in the field of safety engineering, to the analysis of the current matter, and the formulation of opinions and conclusions regarding causation and responsibility.

In addition, this report and attached *Appendix A* contains all information and documents necessary to meet the requirements of Federal Rules of Civil Procedure Rule 26(a)(2)(B) for written reports, which must contain:

- (i) a complete statement of all opinions the witness will express and the basis and reasons for them;

- (ii) the data or other information considered by the witness in forming them;
- (iii) any exhibits that will be used to summarize or support them;
- (iv) the witness's qualifications, including a list of all publications authored in the previous 10 years;
- (v) a list of all other cases in which, during the previous 4 years, the witness testified as an expert at trial or by deposition; and
- (vi) a statement of the compensation to be paid for the study and testimony in the case.

SUMMARY OF QUALIFICATIONS:

The following is a brief overview of my qualifications, with more detail provided in my resume attached in *Appendix A*.

I have been a professional engineering consultant since 1999, primarily consulting in the field of safety engineering, including workplace safety, premises safety, product safety, safety management, and human factors/ergonomics. My formal education consists of earning a Bachelor of Science degree in Industrial Engineering, to include completion of the requirements for a Systems Safety Engineering Specialty, and subsequently earning a Master of Science degree in Safety Engineering, both from Texas A&M University in College Station, Texas.

I am a Licensed Professional Engineer in the State of Texas (P.E., No. 94872) and a nationally Certified Safety Professional (CSP, No. 18059). In addition, I am a professional member of the American Society of Safety Engineers, Human Factors and Ergonomics Society, American Society of Agricultural and Biological Engineers, National Safety Council, International Code Council, and serve on several safety standard development committees for ASTM International.

I have specific qualifications and experience regarding the subject matter of this report, to include workplace safety, safety management, fall prevention, scaffolding safety, and related authoritative literature and standards, including OSHA. I have personally investigated numerous fall incidents in various industries, including falls and incidents involving scaffolding.

The subject matter relative to this analysis is directly related to my professional knowledge, skills, experience, education, training, and practice, and thus I am fully qualified to evaluate this matter and offer professional opinions.

BRIEF SYNOPSIS OF INJURY EVENT:

It is generally understood that in March of 2013, San Miguel Electrical Cooperative (SMEC) had contracted Welding Technologies to perform automatic specialty welding as part of the annual maintenance of the boiler at their 450 MW, fossil-fired, steam-electric power plant located in Atascosa County near Christine, Texas. The main interior area of the boiler where the work was to be performed measured approximately 67 feet by 45 feet and 189 feet high (per engineering drawings). In order to perform the work and access the waterwall tubes, Basic Industries was contracted to erect scaffolding within the interior of the boiler.

It is understood there were two entrances into the boiler and scaffolding system, one at the top at a level near 189 feet, and one at the bottom. The scaffold stair tower providing access to the various work levels within the boiler was located on the opposite side of the boiler from the bottom entrance/exit. In order access the bottom exit from inside the boiler based on the configuration of the scaffold, it is understood you would descend to the bottom of the stairway, then descend a short ladder to a landing, and then you would have to crawl on your hands and knees under beams across the bottom of the boiler to reach the exit. As work progressed, slag and debris would fall to the bottom of the boiler, making it a very rough surface to crawl across when you enter or exit the boiler. Because of this, Harold "Hank" Pierce, the day-shift foreman for Welding Technologies, requested that Basic Industries construct a scaffold walkway on top of the beams so that workers could safely walk across the boiler to the bottom entrance/exit, as opposed to having to crawl under the beams.

On March 19, 2013, Mr. Pierce descended to the bottom of the stairway while inspecting his crews work progress, and saw that a section of guardrail had been removed providing access to a ladder. Since there were no barricades or warnings present, and since the scaffold was green-tagged, Mr. Pierce believed Basic Industries had completed the previously requested modification of the walkway to the bottom exit. Accordingly, Mr. Pierce descended the ladder, and once at the bottom, he looked down to his left side and saw scaffold planking forming the landing. He then placed his left foot down on the landing, then placed his right foot down and felt his foot contact the scaffold landing. However, when he released the ladder to put his full weight on his feet, his right foot slipped off the end of the scaffold plank. Unknown to Mr. Pierce due to the lack of barricades and warnings, the ladder landing and walkway was incomplete, with the scaffold planking not extending the full width of the ladder.

Accordingly, as Mr. Pierce placed his weight down on his right foot, it slipped off the end of the incomplete landing, causing him to fall toward his right and impact a horizontal scaffold brace, breaking 6 ribs. He then fell another 4 feet to the sloped bottom of the boiler, and slid down the slope to the very bottom of the boiler. Apparently in the process of falling, his left leg got caught, injuring his left knee as well.

It is further understood that SMEC enforced their safety program relative to their contractors, and routinely inspected the worksite relative to safety.

DISCUSSION MATERIAL

The following select topics that discuss foundational concepts, guidelines, and information based on authoritative published literature and/or standards is intended to assist the reader in understanding the reliable basis for my subsequent opinions and conclusions regarding this matter.

Safety Engineering and the Hierarchy of Hazard Controls

Generally, safety engineering is the application of scientific and technical principles to the elimination or reduction of hazards that cause personal injury, property damage, and/or environmental damage through the basic process of the identification, evaluation, and control of hazards.

Regarding the control of hazards, since at least the mid 1900s, the published safety literature and good logical safety practice has widely recognized a "hierarchy of hazard controls," with the most effective means to prevent exposure to a hazard being to first remove or eliminate the hazard if at all

possible, and if such hazard cannot be eliminated, then the next most effective method is to physically safeguard the hazard with appropriate safety devices to prevent or minimize exposure, and after all means for removal and safeguarding have been exhausted, any remaining hazards should be addressed (controlled) through the proper use of warnings, procedures/training, and/or personal protective equipment.

In order to achieve these goals, it is necessary to have a proper safety management system in place. Roger Brauer states, "Management involves the planning, obtaining, organizing, and orchestrating the elements necessary to achieve the goals." (*Safety and Health for Engineers*, 2006). OSHA states in various publications that an effective occupational safety and health program will include four critical elements: management commitment and employee involvement; worksite analysis; hazard prevention and control; and training for employees, supervisors and managers.

Recognizing the Prevalence of Injuries Associated with Falls

The National Safety Council's *Injury Facts* indicates falls have consistently been the leading cause for injury-related hospital emergency department visits, almost double the percentage of the second leading cause -- motor-vehicle accidents. Data from 1995 indicates falls caused 20.8 percent of all injury-related hospital emergency department visits, with injury-related visits caused by motor-vehicle accidents ranked second at 11.9 percent (*Accident Facts*, National Safety Council, 1998); Data from 2000 indicates falls caused 19.9 percent of hospital emergency department visits (*Injury Facts*, National Safety Council, 2002); Data from 2005 indicates falls were responsible for 20.8 percent of hospital emergency department visits (*Injury Facts*, National Safety Council, 2008).

While falls have historically been the leading cause of all unintentional injuries (which includes non-fatal and fatal combined), falls have been ranked as the 2nd or 3rd leading cause of unintentional injuries resulting in death.

Specific to workplace falls, the construction industry has the most fatalities of any industry, and falls to a lower level has consistently been the leading cause of construction workplace fatalities (*Injury Facts*, National Safety Council, 2008). Specifically regarding scaffolding, OSHA's annual "Top 10" list of most frequently cited violations has ranked scaffolding violations first every year since 2002, with the "Top 5" sections cited in 2009 being 1926.451(g)(1) - Failure to provide fall protection (guardrails or personal fall arrest systems), (b)(1) - Failure to provide adequate platform construction, (e)(1) - Failure to provide proper access, (c)(2) - Failure to support scaffolding properly, and (g)(4) - Failure to install guardrail systems properly.

With falls as a leading cause of injuries for at least the past 5 decades as shown in annually published statistics from the Bureau of Labor Statistics and the National Safety Council's *Injury Facts* (formerly titled *Accident Facts*), the prevention of falls should be a major focus of safety efforts to identify and correct potential causative factors associated these types of injuries as identified in the authoritative and readily available published safety literature, standards, and guidelines.

Select Applicable Standards and Guidelines Pertaining to Scaffolds, Ladders, and Work Platforms

Select provisions of the standards and guidelines particularly relevant to this matter include the following:

- **American National Standards Institute: ANSI/ASSE A10.8 - "Safety Requirements for Scaffolding" - 2001.**

Section 1 - General

1.1 - Scope - This standard establishes safety requirements the construction, operation, maintenance, and use of scaffolds used in the construction, alteration, demolition, and maintenance of buildings and structures.

Section 4 – General Requirements for All Scaffolds

4.1 - Scaffolds shall be furnished, erected, and used in accordance with this standard and available manufacturer specifications for persons engaged in work that cannot be done safely from the ground or from a permanent structure. Ladders used for such work shall conform to ANSI A14 standards.

4.6 - Guardrail systems shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor...

4.16 - Platforms on all working and rest surfaces on all scaffolds shall be fully planked or decked with platform units as follows:

1) Platform units shall be placed as close as possible to adjacent units. Any space between adjacent units shall be no more than 1-inch wide except as necessary to fit around uprights when side brackets are used to extend the width of the platform.

2) Where full planking or decking cannot be obtained using standard width units, the platform shall be planked or decked as fully as possible. However, the remaining open space between the platform and guardrail supports shall not exceed 9-1/2 inches.

4.44 - Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling or alteration. Such activities shall be performed only by experienced and trained employees selected for such work by the competent person.

4.46 - On scaffolds that will remain on projects for long durations in either a fully or partially erected state, or on scaffolds that may be potentially used by persons other than those responsible for their erection, dismantlement, alteration or modification, a notifications system shall be used to inform workers of the status and condition of the scaffold that includes at least the following information:

4.46.1 - Completed, inspected by a competent person, and ready for use, (date, inspector/competent person);

4.46.2 - Partially completed, not ready for use (why, date, inspector/competent person); or

4.46.3 - This scaffold is unsafe, not ready for use. Do not use without prior authorization from _____.
[Appendix E of standard contains a sample tagging program.]

- **American National Standards Institute: ANSI A14.3 - "American National Standard for Ladders - Fixed - Safety Requirements" - 2002.**

Section 6.3 - Platforms

6.3.1.1 - Platforms shall consist of a horizontal area on which a person may step while climbing a ladder, either for rest purposes or for access to another section of the ladder.

6.3.1.2 - All platforms shall be provided with railings and toeboards, in accordance with ANSI A1264.1 - 2002.

6.3.2 - The total depth of the platform shall provide a minimum space of 30 inches from the centerline of the ladder on the climbing side. The width of the platform shall be not less than 30 inches.

- **29 CFR 1926 (OSHA - Construction) Subpart L – Scaffolds**

1926.451 – General Requirements

1926.451(b) - Scaffold platform construction

(1) - Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports as follows:

(i) Each platform unit (e.g., scaffold plank, fabricated plank, fabricated deck, or fabricated platform) shall be installed so that the space between adjacent units and the space between the platform and the uprights is no more than 1 inch (2.5 cm) wide, except where the employer can demonstrate that a wider space is necessary (for example, to fit around uprights when side brackets are used to extend the width of the platform).

(ii) Where the employer makes the demonstration provided for in paragraph (b)(1)(i) of this section, the platform shall be planked or decked as fully as possible and the remaining open space between the platform and the uprights shall not exceed 9 1/2 inches (24.1 cm). Exception to paragraph (b)(1): The requirement in paragraph (b)(1) to provide full planking or decking does not apply to platforms used solely as walkways or solely by employees performing scaffold erection or dismantling. In these situations, only the planking that the employer establishes is necessary to provide safe working conditions is required.

(2) Except as provided in paragraphs (b)(2)(i) and (b)(2)(ii) of this section, each scaffold platform and walkway shall be at least 18 inches (46 cm) wide.

(ii) Where scaffolds must be used in areas that the employer can demonstrate are so narrow that platforms and walkways cannot be at least 18 inches (46 cm) wide, such platforms and walkways shall be as wide as feasible, and employees on those platforms and walkways shall be protected from fall hazards by the use of guardrails and/or personal fall arrest systems.

1926.451(e)(1) - When scaffold platforms are more than 2 feet (0.6 m) above or below a point of access, portable ladders, hook-on ladders, attachable ladders, stair towers (scaffold stairways/towers), stairway-type ladders (such as ladder stands), ramps, walkways, integral prefabricated scaffold access, or direct access from another scaffold, structure, personnel hoist, or similar surface shall be used. Crossbraces shall not be used as a means of access.

1926.451(g) - Fall protection

(1) - Each employee on a scaffold more than 10 feet (3.1 m) above a lower level shall be protected from falling to that lower level. Paragraphs (g)(1)(i) through (vii) of this section establish the types of fall protection to be provided to the employees on each type of scaffold.

(v) Each employee on a walkway located within a scaffold shall be protected by a guardrail system installed within 9-1/2 inches of and along at least one side of the walkway.

(vii) - For all scaffolds not otherwise specified in paragraphs (g)(1)(i) through (g)(1)(vi) of this section, each employee shall be protected by the use of personal fall arrest systems or guardrail systems meeting the requirements of paragraph (g)(4) of this section.

(4) - Guardrail systems installed to meet the requirements of this section shall comply with the following provisions:

(i) - Guardrail systems shall be installed along all open sides and ends of platforms. Guardrail systems shall be installed before the scaffold is released for use by employees other than erection/dismantling crews.

- **29 CFR 1910 (OSHA - General Industry) Subpart D – Walking-Working Surfaces**

1910.23 - Guarding floor and wall openings and holes.

1910.23(a)(2) - Every ladderway floor opening or platform shall be guarded by a standard railing with standard toeboard on all exposed sides (except at entrance to opening), with the passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening.

1910.23(c)(1) - Every open-sided floor or platform 4 feet or more above adjacent floor or ground level shall be guarded by a standard railing (or the equivalent as specified in paragraph (e)(3) of this section) on all open sides except where there is entrance to a ramp, stairway, or fixed ladder.

1910.27 – Fixed Ladders

1910.27(d)(2)(ii) - All landing platforms shall be equipped with standard railings and toeboards, so arranged as to give safe access to the ladder. Platforms shall be not less than 24 inches in width and 30 inches in length.

1910.28 - Safety requirements for scaffolding.

1910.28(a)(12) - An access ladder or equivalent safe access shall be provided.

Special note: Per an OSHA interpretation (dated August 11, 1994) regarding the difference between construction and maintenance work, and the associated use of 1910 (general industry) versus 1926 (construction) standards, OSHA defines "construction work" as "construction, alteration, and/or repair, including painting and decorating." The interpretation states, "Further, construction work is not limited to new construction. It includes the repair of existing facilities. The replacement of structures and their components is also considered construction work." It further states, "There is no specified definition for 'maintenance', nor a clear distinction between terms such as 'maintenance', 'repair', or 'refurbishment.' 'Maintenance activities' can be defined as making or keeping a structure, fixture or foundation (substrates) in proper condition in a routine, scheduled, or anticipated fashion. This definition

implies 'keeping equipment working in its existing state, i.e., preventing its failure or decline.' The interpretation concludes, "...where an activity cannot be easily classified as construction or maintenance even when measured against all of the above factors, the activity should be classified so as to allow application of the more protective 1910 or 1926 standard, depending on the hazard."

Warning Signage

For hazards that cannot be addressed by more effective means such as hazard removal or physical safeguarding, effective warnings and instructions must be utilized in order to prevent exposure to hazards and subsequent injury, or may be used in combination with physical safeguarding for additional safety. A proper warning sign should provide information to the intended reader so that they fully understand the danger involved with a particular hazard present, and/or in a certain potential behavior. An adequate warning must provide (1) a clear and meaningful comprehension of the hazard present, (2) what can result from such hazard, and (3) what action is necessary in response to such warning for the individual to avoid potential injury.

Warnings must be clear and concise, conspicuous (defined as reasonable certainty of perception, without search, in a short time), practical (i.e., the response to such warning to avoid potential injury must be realistic and within human factor capabilities and limitations), and placed in a location to alert and inform the reader in sufficient time to take evasive action prior to being exposed to the hazard.

There are numerous texts and authoritative resources outlining the essential elements of adequate warnings, to include OSHA 29 CFR 1910.145 - *Specifications for accident prevention signs and tags*, OSHA 29 CFR 1926.200 - *Accident prevention signs and tags*, ANSI Z535.2 - *American National Standard for Environmental and Facility Safety Signs*, and other standards in the ANSI Z535 series. Elements involved in producing an adequate warning include, but are not limited to, utilizing appropriate signal words (Danger, Warning, Caution, Notice), coloring, letter formats (letter size, style, and spacing), safety symbols (pictorials, pictographs, or other graphic representations), effective sign placement, sign illumination, and message content.

SUMMARY OPINIONS AND CONCLUSIONS

In this matter, the principal causative factor related to this incident was the presence of an incomplete scaffold access way (or means of egress) relative to the bottom entrance/exit of the boiler, with the lack of any barricades to prevent access to the unsafe area, or any warning signs, tape, or tags to indicate the dangerous area and its incomplete state.

The above discussed causative factor, along with associated causative factors, are further detailed in the following paragraphs, along with a discussion of the associated responsibilities of Basic Industries and SMEC relative to such factors.

1. SMEC, as top management and operator of the power plant in this matter, knew or undeniably should have known of their responsibility to provide overall leadership regarding the work projects being performed at their facility, to include jobsite safety. SMEC appears to have failed in certain areas of such responsibility as is further discussed within this report.

Similarly, Basic Industries knew or undeniably should have known of their responsibility to exercise reasonable care to perform their contracted portion of the project in a safe manner to do their part in maintaining a workplace free of hazards likely to cause death or serious physical harm. Specifically, Basic Industries knew or should have know of their responsibility to supply, install, and maintain the jobsite scaffolding in this matter to be free of recognized hazards for all persons that may utilize such scaffolding in the performance of their work.

2. In addition to this general good practice (ordinary care) responsibility, SMEC and Basic Industries knew or should have known that this was also a responsibility required under federal workplace safety legislation, the *Occupational Safety and Health Act of 1970*, [also codified in Chapter 15 - "Occupational Safety and Health" of Title 29 of the *United States Code*, with such code containing the general and permanent laws of the United States]. Specifically, Section 5(a)(1) [or 29 USC 654(a)(1)] states that each employer "shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees" and 5(a)(2) [or 29 USC 654(a)(2)] states that each employer "shall comply with occupational safety and health standards promulgated under this chapter." While subsection (a)(1) creates a general duty pertaining only to an employer's own employees, subsection (a)(2) creates a specific duty to comply with standards for the good of all employees on a multi-employer worksite (source: United States Court of Appeals for the Eighth Circuit, "Petition for Review from the Occupational Safety and Health Review Commission," Hilda Solis, Secretary of Labor, United States Department of Labor, Petitioner v. Summit Contractors, Inc., Respondent, Occupational Safety and Health Review Commission, Nominal Respondent, No. 07.2191, Filed February 26, 2009).

A multi-employer worksite is a worksite with people present who are employed by different employers, that is, workers present who are employed by someone other than the top or primary employer/manager at the worksite. These workers may be subcontractors, leased or borrowed employees, maintenance or cleaning crews, inspectors, individuals picking up or delivering particular items at the jobsite, or others.

The Occupational Safety and Health Administration (OSHA), a federal agency created under the OSH Act of 1970, establishes and enforces safety and health standards. To assist in the enforcement of these standards and to establish responsibilities for safety on multi-employer worksites, OSHA issued a directive (Directive 2-0.124 titled "Multi-Employer Citation Policy," December 10, 1999) to further clarify their view of responsibility for safety on multi-employer worksites. According to this directive, "On multi-employer worksites (in all industry sectors), more than one employer may be citable [responsible] for a hazardous condition that violates an OSHA standard." The directive categorizes employers/contractors as follows:

"*Creating Employer*" - The employer that caused a hazardous condition that violates an OSHA standard.

"*Exposing Employer*" - An employer whose own employees are exposed to the hazard.

"*Correcting Employer*" - An employer who is engaged in a common undertaking, on the same worksite, as the exposing employer and is responsible for correcting a hazard.

"*Controlling Employer*" - An employer who has general supervisory authority over the worksite, including the power to correct safety and health violations itself or require others to correct them.

According to this OSHA policy, if an employer fits into one or more of these categories, it has obligations with respect to OSHA requirements.

In this matter, Basic Industries was the contracted entity responsible for the scaffolding used on the project, they ultimately created the hazard when their employees failed to barricade (prevent access) and install warning tags, signs, or barricade tape to inform all workers at the worksite using the scaffolding that the portion of the scaffold involved in this matter was incomplete and not safe for use. Basic Industries was also responsible for correcting any deficiencies with the scaffolding, which they failed to do in this matter.

Regarding SMEC, they were the "controlling employer" for the worksite and project, which included implementing their worksite safety plan, and overseeing and requiring compliance with such plan by outside contractors on their worksite. In SMEC's "General Safety Instructions for Contractors," they specifically state:

"Hazardous work areas are to be adequately identified by warning signs, barrier tape, guard rails or other proper protection. Anytime the configuration of an area could result in someone falling, tripping, hitting their head, being exposed to uncontrolled power, hazardous chemicals, sand blasting hoses, etc. we shall:

(a) Barricade and isolate the area so no one can enter, except those employees authorized to perform the work. Do not use materials/furniture, etc, from the work area as a barricade. The hazard shall be completely encircled. No side will be left open. "Danger" barricades are red and black tape. It is used to inform workers that an immediate hazard exists and that specific precautions must be observed to avoid an accident. NO ONE shall cross a RED barricade without authorization from the individual performing the work within the barricade. "Caution" barricades are yellow and black tape. It is used to inform workers to proceed with caution. It can be used for marking physical hazards caused by striking against, stumbling, tripping, and being caught between hazards. All barricades will have a "barricade" tag secured to the barricade with the name of the person in charge of the work being performed within the barricaded area.

(b) Any floor opening will be covered with a cover that is as strong as the surrounding floor area, secured, and labeled "HOLE". These areas will be barricaded with red and black barricade tape as in "a" above. If a floor opening is left open for any reason there must be someone there to guard against someone walking through the area. An alternative to using a cover, barricade tape, and guard is to construct a barricade from tube and clamp scaffolding with knee rails and handrails. A "DANGER DO NOT ENTER" sign shall be attached to the barricade.

(c) The employees authorized to perform the work will promptly upon completion of the task remove all barricades.

(d) Make every effort to finish the work and restore the area in one day. NEVER leave a job site in a hazardous condition overnight. If the job is so large it will take more than a day to complete, either break it into smaller segments, or tell your supervisor there is a potential safety hazard that needs his/her attention."

SMEC appears to have failed to adequately implement and enforce their safety program by inspecting the worksite for hazards and required the hazards to be corrected in accordance with their safety program, while Basic Industries failed to comply with the safety program relative to their contracted portion of the work, which in this project, was specifically the erection and maintenance of the scaffolding.

3. In addition to the specific onsite safety policies referenced above, SMEC and Basic Industries knew or undeniably should have know of the previously cited federal workplace regulations outlined in both the 1910 and 1926 OSHA standards, along with the previously cited national consensus "good practice" standards published by the American National Standard Institute (ANSI).

4. Accordingly, SMEC and Basic Industries failed to comply with good reasonable practice, the previously cited standards and federal regulations, and the basic principles of safety engineering and the "hierarchy of hazard controls" briefly discussed previously in this report.

In this regard, SMEC and Basic Industries knew or should have generally known that falls as a category of injury represent a significant source of injury to persons in regard to all environments, are recognized as the leading cause of fatalities regarding construction workplaces, and as previously discussed in this report, falls are the leading cause of non-fatal hospital emergency department visits. Specific to scaffold related worker injury, falls are logically the leading cause and risk for injury. Recognizing the serious nature and risk of falls relative to the large system scaffold structure inside the boiler providing access for all involved workers (regardless of employer), the prevention of falls relative to such scaffold should be a focus of SMEC's and Basic Industries' safety efforts to identify and correct potential causative factors associated with falls as identified in the authoritative and readily available published literature, standards, regulations, and guidelines.

Mr. Pierce stated that when he entered the scaffold, it was green-tagged, indicating it was safe to use. However, the scaffold where the incident occurred was incomplete and unsafe. The scaffold ladder Mr. Pierce descended lacked a completed landing platform, with the scaffold platform that was to serve as the landing platform only being partially planked. The platform also lacked guardrails along the open edges to prevent falls from the platform.

Basic Industries failed to properly erect the scaffold in a safe manner, or otherwise failed to erect barricades to prevent access to any unsafe and incomplete portion of the scaffold, and failed to install warnings or tag to indicate the portion of the scaffold being modified was incomplete and "do not enter".

Based on the limited information known at this time, it appears SMEC failed to adequately implement, oversee, and enforce their "General Safety Instructions for Contractors" relative to the portions of the scaffold that were incomplete or otherwise unsafe for use.

5. The above discussed failures on the part of SMEC and Basic Industries created an unreasonably dangerous workplace condition with a significant risk of serious injury, which ultimately caused Mr. Pierce to fall from the scaffold and be injured.

CLOSING REMARKS

This report contains my preliminary summary opinions to date regarding the causative factors of the incident in this matter, and the associated responsibilities of SMEC and Basic Industries based on the material supplied and reviewed to date as documented in this report. Please note that I anticipate and reserve the right to respond to those who might request further clarification of these opinions regarding these or other parties, and the right to re-evaluate and potentially alter these opinions as new or additional information is made available.



Jason T. English, M.S., CSP, P.E.

2/2/14



ENGLISH ENGINEERING INC.

F-11049

APPENDIX A

Attachment to the report of:

Jason T. English, M.S., CSP, P.E.

Re: Harold A. Pierce, Jr. vs. Basic Industries, Ltd. and San Miguel Electrical Cooperative, Inc.

February 2, 2014

**In accordance with Rule 26(a)(2)(B)(i) and (ii) - Data and other information
considered in forming the basis and reasons for opinions expressed in written report.**

DISCOVERY DOCUMENTS SUPPLIED AND OTHER INFORMATION FOR REVIEW

The following discovery documents were supplied and reviewed prior to the preparation of the report :

- Various documents produced by Defendant San Miguel Electrical Cooperative, bates labeled SMEC 0001 to SMEC 0170, which includes photographs, engineering drawings, WTI Incident Report, SMEC's "Boiler Work Specification Clad Welding" (Bid Proposal), WTI's bid quotes, etc.
- Personal phone interview on December 20, 2013 of Mr. Harold Pierce, Jr. to discuss the incident event and conditions present.

PUBLISHED LITERATURE AND REFERENCES

A sample of the published authoritative safety literature and references utilized in forming opinions in this report are listed in the following bibliography:

Scaffolding

U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1926 Subpart L - Scaffolds, 2012.

U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910 Subpart D - Walking-Working Surfaces, 1910.28 - Safety Requirements for Scaffolding, 2012.

American National Standards Institute, Inc., ANSI/ASSE A10.8-2001, "Safety Requirements for Scaffolding – American National Standard for Construction and Demolition Operations," 2001.

Morrison, Kyle, "OSHA's Top 10 Most Cited Violations 2009," Safety+Health, December 2009. Note: Scaffolds ranked first since 2002.

U.S. Department of Labor, OSHA, "A Guide to Scaffold Use in the Construction Industry," OSHA 3150, 2002 (Revised), pp. 1-15.

Fixed Ladders

American National Standards Institute, ANSI A14.3-2002, *American National Standard for Ladders - Fixed - Safety Requirement*, 2002.

U.S. Department of Labor, 29 CFR 1910.27 - Fixed Ladders, 2012, pp. 87-89, 113-116, 127-133.

Warning Signs

American National Standards Institute, ANSI Z535.2 - 2007, *American National Standard for Environmental and Facility Safety Signs*, 2007.

Brauer, Roger L., *Safety and Health for Engineers*, Second Edition, 2006, pp. 73.

Peters, George A., "15 Cardinal Principles to Ensure Effectiveness of Warning System," *Occupational Health & Safety*, May 1984, pp. 76-79.

U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), 29 CFR Part 1910, Subpart J – General Environmental Controls, 1910.145 - Specifications for accident prevention signs and tags, 2010, pp. 87-89, 460-464.

U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), 29 CFR Part 1926, Subpart G – Signs, Signals, and Barricades, 2010, pp. 7-10, 210-213.

Wogalter, Michael S., Vincent C. Conzola, and Tonya L. Smith-Jackson, "Research-based Guidelines for Warning Design and Evaluation," *Applied Ergonomics*, Vol. 33, 2002, pp. 219-230.

Multi-Employer Worksites

Grossman, David, "Construction Industry Builds a Safe Workplace," *Safety & Health*, April 1991, pp. 48-51.

Morrison, Kyle, "OSHA Policy Upheld," *Safety+Health*, April 2009, pp. 38-39.

National Safety Council, *Accident Prevention Manual for Business & Industry: Administration & Programs*, 12th Edition, 2001, pp. 606-610.

Nelson, Daniel, "Who is Responsible for Safety?," *Professional Safety*, April 2001, pp. 21-24.

U.S. Department of Labor, Occupational Safety and Health Administration, *OSHA Directive CPL 2-0.124 – Multi-Employer Citation Policy*, December 10, 1999, pp. 1-11.

**In accordance with Rule 26(a)(2)(B)(iii) - Exhibits that will be used to
summarize or support opinions expressed in written report.**

Potential exhibits that may be utilized to summarize and support opinions will be derived from the information and documents contained or referenced in the written report and this Appendix A, with such information potentially being enlarged and/or reformatted.

**In accordance with Rule 26(a)(2)(B)(iv) - Witness's qualifications,
including a list of all publications authored in the previous 10 years.**

See Jason T. English's Curriculum Vitae (resume) and list of publications immediately following this page.

ENGLISH ENGINEERING INC.

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jason@english-engineering.com

JASON T. ENGLISH, M.S., CSP, P.E.

EDUCATION:

- Post Graduate Directed Studies in Machine Guarding, Department of Safety Engineering
Texas A&M University (College Station), 2002
- Directed Studies in Means of Egress (Walking/Working Surface Design),
College of Architecture, Texas A&M University (College Station), 2001
- M.S. Safety Engineering, Department of Safety Engineering
Texas A&M University (College Station), 1999
(3.83 Graduate GPA)
- B.S. Industrial Engineering, Systems Safety Engineering Specialty,
Department of Industrial Engineering, Texas A&M University (College Station), 1998

CERTIFICATIONS AND REGISTRATIONS:

- Registered Professional Engineer (P.E.), Texas, No. 94872
- Board Certified Safety Professional (CSP), No. 18059
- Certified (English XL) Variable Incidence Tribometrist (CXLT), No. 164 (i.e., certified to
measure and evaluate pedestrian traction on walking surfaces utilizing the English XL slip meter)

PROFESSIONAL MEMBERSHIPS:

- American Society of Safety Engineers
- Human Factors and Ergonomics Society
- ASTM International
 Committees: F13 on Pedestrian/Walkway Safety and Footwear; F15 on Consumer Products;
 F08 on Sports Equipment and Facilities; E58 on Forensic Engineering; E30 on Forensic Sciences
- American Society of Agricultural and Biological Engineers
- International Code Council
- National Safety Council

EXPERIENCE:

Consultant - English Engineering Inc., July 2009-Present.

Accident cause analysis. Industrial, premises, and product related accident investigation. Workplace safety engineering. Machine guarding. Premises safety engineering (especially stairs, ramps, and level walking surfaces). Product safety engineering. Design of adequate warnings and instructions. Industrial, construction, premises, and product safety management. Fall protection and prevention (same level and from elevation). Human factors and ergonomics. Analysis of manual material handling tasks. System safety analysis. Safety research.

Additional services include construction monitoring services (residential and commercial), product evaluations, slip resistance testing, safety audits, and other miscellaneous consulting.

Associate, Professional Consultant – Nelson & Associates, May 1999-July 2009.

Same as stated above in first paragraph regarding accident cause analysis.

Construction Inspector – Independent Contracting, 2004 – 2008

Perform construction progress and quality inspections of primarily new residential construction.

Research Associate – Texas A&M University, Texas Engineering Experiment Station, National Science Foundation Industry/University Cooperative Research Center in Ergonomics, Aug. 1997-May 1999.

The Ergonomics Center research areas included: manual lifting, energy expenditure, anti-fatigue mats, cart pushing/pulling, office ergonomics (workstation design, posture, repetitive motion, effects of 21” monitors in the office environment), validation of distal upper extremity strain index, and heat stress.

Research was done in cooperation with Industry Partners, which included United Services Automobile Association (USAA), United Parcel Service (UPS), Browning-Ferris Industries (BFI), Aluminum Company of America (ALCOA), INTEL Corporation, and Neutral Posture Ergonomics.

SELECT GRADUATE AND UNDERGRADUATE COURSEWORK:

Safety Engineering

- Product Safety Engineering
- Industrial Safety Engineering
- System Safety Engineering
- Engineering Ethics
- Facilities Location, Layout, & Material Handling

Human Factors & Ergonomics

- Occupational Biomechanics
- Human Information Processing (Human Factors)
- Worker Physiology
- Biological Control System Analysis (Ergonomics)
- Ergonomics & Work Methods
- System Safety Analysis & Design (Ergonomics)

Industrial Hygiene & Occupational Health

- Industrial Hygiene Engineering
- Occupational and Environmental Health
- Acoustics & Noise Control
- Environmental Protection & Public Health
- Occupational & Environmental Epidemiology
- Radiological Safety

Support Areas

- Construction Materials & Methods 1
- Construction Materials & Methods 2
- Electrical Circuits & Instrumentation
- Principles of Statistics 1
- Principles of Statistics 2
- Design & Analysis of Experiments (Statistics)

Post Graduate

- Means of Egress (Design of Stairs, Ramps, Level Surfaces, Changes in Elevation, Lighting; Code Administration)
- Machine Guarding (Principles, Concepts, and Techniques)

PRESENTATIONS

- Invited Speaker, ASSE Gulf-Coast Chapter Meeting, "The Prevention of Walking/Working Surface Related Falls," 2007.
- Guest Lecturer, Texas A&M University, SENG 313 – Product Safety Engineering, Fall 2002.

CONFERENCES AND SEMINARS ATTENDED:

- "A10 Standard on Multi-Employer Worksite Safety," American Society of Safety Engineers, 2012.
- "Rethink Safety: A New View of Human Error and Workplace Safety," ASSE, 2011.
- "Slip, Trip, and Fall Prevention in the Restaurant Industry," American Society of Safety Engineers, 2011.
- "Human Factors in Product and Interface Design," Human Factors and Ergonomics Society, 2011.
- "Slips, Trips, and Falls: Best Practices and Standards," American Society of Safety Engineers, 2009.
- "Changes to the ASSE/ANSI Z117.1 Standard - Safety Requirements for Confined Spaces," ASSE, 2009.
- "Ergonomics Workshop: Using the 3D Static Strength Prediction Program™," Center for Occupational Health and Safety Engineering, University of Michigan, 2009.
- Conference and Exposition, Sessions attended: "Treating Your Own Back Injuries," "Leading with Safety: The Patch to Excellence," "Moving to Task Based Lock-Tag-Try," National Safety Council/Texas Safety Assoc., 2008.
- Photogrammetry – Single Photo Perspective, 2006.
- Conference and Exposition, Sessions attended: "Commercial Vehicle Crashes, Trends, and Prevention Techniques," "Safety Management Leadership: Delivering a High Level of Performance," National Safety Council/Texas Safety Association, 2006.
- Managing Contractor Safety, American Society of Safety Engineers, 2006.
- "Fall Protection," American Society of Safety Engineers, 2006.
- Variable Incidence Tribometer Certification Program, International Safety Academy, 2005.
- "Solving Means of Egress Issues in Commercial Buildings," International Code Council, 2005.
- "Mobile Crane Safety," Crane Institute of America, 2005.
- Safety 2003 Conference and Exposition (3-day), Sessions attended: "Hospitality Safety: Results Beyond Compliance," "Safety After Hours (Consumer Product Safety)," "Ladder Safety - Using the A14 Standards as a Benchmark," "Risk Management for Crane and Rigging Operations," "Contractor Safety: Know the Risks...And Manage Them," "Integrated Hazard Analysis: Using the Strengths of Multiple Methods to Maximize Effectiveness," "Machine Safeguards: What to Use and When?," "Fall Protection for Difficult Exposures," ASSE, 2003.
- "Fall Protection," Texas Worker's Compensation Commission, 2001.
- "Trenching and Shoring," Texas Worker's Compensation Commission, 2001.
- "Construction Safety," Texas Workers' Compensation Commission, 2001.

PRE-COLLEGIATE:

Eagle Scout

List of Publications
Jason T. English, M.S., CSP, P.E.

"Application of the ADA Means of Egress Provisions to Construction, Alterations, and Existing Facilities of Public Entities," Nelson & Associates Fact Sheet, 2002, (Revised 2005).

"Application of the ADA Means of Egress Provisions to New Construction, Alterations, and Existing Facilities of Private Entities," Nelson & Associates Fact Sheet, 2001 (Revised 2005).

"Back Belts and Manual Materials Handling," Nelson & Associates Fact Sheet, 2002.

"Basic Elements of (Illumination) Lighting," Nelson & Associates Fact Sheet, 2004.

"Dark Adaptation," Nelson & Associates Fact Sheet, 2008.

"Five Types of Same-Level Falls," Nelson & Associates Fact Sheet, 2006.

"How to Convert: Slope-% Slope-Degrees-Grade-% Grade," Nelson & Associates Fact Sheet, 2007.

"Human Vision During the Walking Process," Nelson & Associates Fact Sheet, 2008.

"Machine Guarding – The Basic Principles and Techniques," Nelson & Associates Fact Sheet, 2007.

"Premises Management Responsibility for the Establishment and Implementation of the Basic Elements of Premises Safety Programming," Nelson & Associates Fact Sheet, 2001.

"Say 'Goodbye' to the Standard Building Code (SBC), Uniform Building Code (UBC), and the BOCA National Building Code, Say 'Hello' to the International Building Code (IBC)," Nelson & Associates Fact Sheet, 2006.

"The Effects of Jerking Motions During Manual Lifting Tasks," Nelson & Associates Fact Sheet, 2001.

In accordance with Rule 26(a)(2)(B)(v) - List of all other cases in which, during the previous 4 years, the witness testified as an expert at trial or by deposition.

See "Depositions and Trials List - Past 4 years" immediately following this page.

Deposition and Trials List - Past 4 Years

Jason T. English, M.S., CSP, P.E.

John Perez vs. Best Buy Co., Inc., In the County Court at Law Number 4 in Nueces County, Texas, No. No. 06-62681-4, Deposition: 3/26/09, Arbitration: 1/28/10.

Crystal Champion vs. Dave & Busters, Inc., In the District Court 224th Judicial District of Bexar County, Texas, Cause No. 2008-CI-13400, Deposition 5/22/09, Trial: 6/10/10.

Omar Rangel, et al. vs. Sodexho, Inc. and Bay Area Healthcare Group, LTD. d/b/a Doctors Regional Hospital, In the County Court, at Law No. 3 Nueces County, Texas, No. 08-60194-3, Deposition 6/17/09, Trial: 9/25/10.

Willie Franklin Cowart and Donna J. Cowart vs. Nederland Apostolic Church, J.C. Corkran, and Mark Colley, In The 60th Judicial Court of Jefferson County, Texas, No. B179229, Deposition: 11/18/09.

Eunice Stroope vs. Simon Property Group (Texas), L.P., et al., In the County Court of Law No. 4 of Dallas County, Texas, No. 08-05722-A, Deposition: 12/14/09.

William Amdall v. Vantex Enterprises, Inc. d/b/a/ Big Daddy's Liquor Beer Wine, In the District Court of Dallas County, Texas, 193rd Judicial District, No. 09-4746, Deposition: 3/10/10.

Charles L. Davis v. Union Pacific Railroad Company, In the District Court of Harris County, Texas, 11th Judicial District, No. 2009-06074, Deposition: 3/24/10.

Mary Kathryn Roth, Individually and as Representative of the Estate of Jacob Warren Roth, Deceased; and Frank Ronald Roth, Individually v. Kiewit Offshore Services, Ltd.; Keppel AmFELS, Inc. (USA); Raytheon Company; and The Boeing Company, In the District Court of Cameron County, Texas, 357th Judicial District, No. 2007-08-004241-B, Deposition: 4/22/10

Fernando Gonzalez vs. Du-Tex Inc. and Du-Tex Properties, L.L.C., In the District Court of Nueces County, Texas, 94th Judicial District, No. 08-851-C, Trial: 5/12/10

Marietta Gay vs. Cotton Patch Cafe, Inc., et. al., In the District Court of Dallas County, Texas, 116th Judicial District, No. DC-0900704, Deposition: 5/21/10

Susan McMillan vs. WSRH Austin, LP and Renaissance Hotel Operating Co., In the District Court of Travis County, Texas, 53rd Judicial District, No. D-1-GN-08-001012, Deposition: 5/27/10

Martha Rivas, Individually, and as Guardian of the Person and Estate of Santos Osorto, Incapacitated, et al. vs. GALP CNA Limited Partnership, et al., In the District Court of Harris County, Texas, 11 Judicial District, No. 2008-61897-A, Deposition: 6/30/10

Brett Schneider vs. Simpson Property Group, L.P., et al., In the District Court of Collin County, Texas, 296th Judicial District, No. 296-03071-2008, Deposition: 7/7/10

Jill Aleshire, individually and as next friend for Katie Aleshire, a minor vs. Richard Ronald Pitre, et al., In the County Court at Law Number 5, Dallas County, Texas, No. CC-08-01579-E, Trial: 8/3/10

Madel Smith vs. Kroger Texas, LP, et al., In the United States District Court for the Northern District of Texas Fort Worth Division, Civil Action No. 4-09CV-721-A, Deposition: 8/30/10

Marsha Norris vs. Brookshire Grocery Company, In the District Court of Hunt County, Texas, 354th Judicial District, No. 74628, Deposition: 8/31/10

Patricia De La Rosa, individually, as representative of the estate of Miguel Angel Hidalgo Soberano, et al. vs. PRC Environmental, Inc., In the District Court of Harris County, Texas, 61st Judicial District, No. 2008-13574, Deposition: 9/7/10

Shirley Trevino vs. H.E. Butt Grocery Company and Houston Gulfgate Partners, LP, In the District Court of Harris County, Texas, 270th Judicial District, No. 2008-57014, Deposition: 10/7/10

Cynthia Rosser vs. Ken-Do Contracting, LP, In the County Court at Law No. 3, Dallas County, Texas, No. CC-09-07309-C, Deposition: 10/28/10

Jack Allen vs. Hard's Marine Service, Ltd., In the District Court of Harris County, Texas, 281st Judicial District, No. 2009-79710, Deposition: 11/8/10

Allen S. Davis vs. Marriott Ownership Resorts, Inc., and Color Applications, Inc., County of Beaufort, State of South Carolina, In the Court of Common Pleas, Fourteenth Judicial Circuit, No. 2008-CP-07-4029, Deposition: 12/16/10, Trial: 1/13/11

Gary D. Wakefield vs. BNSF Railway Company, In the District Court of Tarrant County, Texas, 141st Judicial District, No. 141-239153-09, Deposition: 1/17/11

Letitia Parquet, et al. vs. Manned Space Flight Education, Inc. d/b/a Space Center Houston, In the District Court of Harris County, Texas, 189th Judicial District, No. 2008-11969, Deposition: 4/15/11

Christy Valverde vs. Albuquerque Public Schools, Second Judicial District Court, County of Bernalillo, State of New Mexico, No. CV-2008-00504, Deposition: 4/28/11

James David Horton, et al. vs. West -Reeves, Ltd., et al., In the District Court of Ellis County, Texas, 40th Judicial District, No. 77623, Deposition: 5/3/11, Trial: 8/16/11.

Jaime Alberto Delgado, individually and as guardian ad litem of Jaime Julian Delgado vs. Wal-Mart Stores, Inc., United States District Court Eastern District of California-Fresno Division, No. 1:09-cv-02199 AWI, Deposition: 6/30/11.

Alysha Ann Floyd vs. Chicsoabby, Inc. d/b/a Room 710 Club, et al., In the District Court of Travis County, Texas, 201st Judicial District, No. D-1-GN-10-002473, Deposition: 7/18/11.

Travelers Property Casualty Company of America a/s/o M&B Metal Products Co., Inc. vs. Oak Mountain Construction Co., Inc., et al., In the Circuit Court of Jefferson County, Alabama, No. 2010-900569, Deposition: 8/2/11.

Jerry Schmidt vs. H.E. Butt Grocery Company and Theis Distributing Co., Inc., In the District Court of Bexar County, Texas, 45th Judicial District, No. 2010-CI-01815, Deposition: 8/3/11

Joseph R. Duchane vs. Southern Foods Group, LLC d/b/a Schepps Dairy, In the County Court of Law No. 1, Dallas County, Texas, No. 10-07102-A, Deposition: 8/25/11, Trial: 11/11/12

Lauro Diaz vs. Bell Processing, Inc., Judicial Workplace Arbitrations, No. 622-A-2011, Deposition: 10/6/11

Cecilia Grant, Individually and as Executrix of the Estate of William Grant, Deceased, et al. vs. Linder Construction Co., Inc. and Ronny Glanton, Inc., In the County Court at Law No. 3, Dallas County, Texas, No. CC-10-06095-C, Deposition: 10/18/11, Deposition cont.: 1/10/12, Trial: 3/29/12 and 4/2/12.

Mary Evelyn Dunn vs. Coca-Cola Enterprises Inc. Individually and d/b/a The Houston Coca-Cola Bottling Company and The Kroger Co., In the District Court of Harris County, Texas, 129th Judicial District, No. 2007-30178, Deposition: 11/1/11

Jon Covington Porter & Kacynthia Porter vs. Omni Hotels Management Corporation, United States District Court, Eastern District of Louisiana, Section "B", Magistrate "1", No. 08-4366, Deposition: 11/22/11

Veronica Alfaro, Guardian of the person and estate of Pedro Lopez, an incapacitated person vs. Currier Carpet Co., Inc., Geneva Multi-Family Services, Inc., and Geneva Multi-Family Exchange VII, LLC, In the Probate Court No. 3 of Harris County, Texas, No. 398429-401, Deposition: 12/7/11.

Michael Laurendine vs. Home Depot U.S. A., Inc., and Michael Cason, In the United States District Court for the Southern District of Texas, Houston Division, Civil Action No. 4:10-cv-04917, Deposition: 1/6/12

Gloria Kukowsky, Individually and as Representative of the Estate of John Kukowsky, et al. vs. Tyson Foods, Inc., In the District Court of Harris County, Texas, 164th Judicial District, Cause No. 2010-31767, Deposition: 1/11/12

Alejandro Cabrera, et al. vs. Hooper Construction, et al., In the District Court of Comanche County, Oklahoma, No. CJ-09-470, Deposition: 1/18/12

Gary Garringer, et al. vs. Exel Logistics, et al., JAMS Ref. No. 1310019248, Deposition: 2/15/12, Arbitration: 8/24/12

Sharon Lea Bethard, et ux. vs. Scottsdale Insurance Company and Multifamily Management, Inc., In the 14th Judicial District Court, Parish of Calcasieu, Louisiana, Docket No. 2010-5690-B, Deposition: 2/16/12

Michael Pishner vs. Austaco, Ltd., In the 85th District Court of Brazos County, Texas, No. 11-000090-CV-85, Deposition: 2/22/12, Trial: 6/26/12

Ernest Myers, Individually and as Representative of the Estate of Sherrie L. Myers, Deceased vs. AFS NW Business Park, LP, In the District Court of Harris County, Texas, 269th Judicial District, No. 2011-21188, Deposition: 3/2/12; Trial: 3/26/13

Gerald Flowers vs. Lea Power Partners, LLC, et al., In the United States District Court for the District of New Mexico, No. 09-CV-569 JAP/SMV, Deposition: 3/27/12

Rita Kuvet vs. Henry's Holdings, LLC, et al., In the County Court at Law No. 1, Travis County, Texas, No. C-1-CV-10-009119, Deposition: 5/21/12

Larry Richardson vs. BNSF Railway Company, In the United States District Court for the Western District of Oklahoma, No. 11 CV-689 F, Deposition: 6/18/12

Theresa Freudensprung vs. Gilbert Rasco, In the District Court of Brazoria County, Texas, 23rd Judicial District, No. 55015, Deposition: 7/9/12

Michael Wray vs. Carranza Welding Supply, LLC, In the County Court at Law No. 2, Dallas County, Texas, No. CC-11-05060-B, Deposition: 8/14/12

Wanda Kay Cohen vs. Landry's Restaurants, Inc. Individually and d/b/a Landry's Inc., and/or Kemah Boardwalk, et al., In the District Court of Galveston County, Texas, 405th Judicial District, No. 11-CV-1942, Deposition: 9/5/12

Martha Rubio vs. HEB Grocery Company, L.P. and HEBCO GP, LLC, American Arbitration Association, No. 70 160 00688 11, Deposition: 9/10/12, Arbitration: 1/22/13.

Aundrea Melancon vs. The Hertz Corporation, et al., In the 24th Judicial District for the Parish of Jefferson, Louisiana, Division "L", No. 682-311, Deposition: 9/12/12, Trial: 10/3/12

James Strickland vs. Corral Group, LP, et al., In the District Court of Dallas County, Texas, 14th Judicial District, No. DC-10-16492, Deposition: 10/10/12

Jackson Davis vs. Case-Newport Limited Partnership, et al., In the District Court of Potter County, Texas, 47th Judicial District, No. 100311-A, Deposition: 10/26/12

Paula Rigler vs. City of Richardson, Individually and d/b/a Charles W. Eisemann Center for the Performing Arts and Corporate Presentations, et al., In the District Court of Collin County, Texas, 366th Judicial District, No. 366-02709-2011, Deposition: 11/1/12

Kelly Williams vs. Woodcrest Alliance Limited Partnership d/b/a Gainesville Factory Shops, et al., In the District Court of Tarrant County, Texas, 96th Judicial District, No. 096-246140-10, Deposition: 11/12/12

Sarah A. Thomas vs. Regency Crossing, LLC d/b/a Catalina Apartments, In the District Court of Harris County, Texas, 129th Judicial District, No. 2011-57125, Deposition: 1/8/13

Yen Bao Nguyen, et al. vs. Tien Quang Bui, et al, In the District Court of Harris County, Texas, 151st Judicial District, No. 2011-51898, Deposition: 2/28/13

Alice Rohr, et al. vs. A.V.L., L.P., In the District Court of Hidalgo County, Texas, 93rd Judicial District, No. C-1499-12-B, Deposition: 4/9/13

Steve Lemin vs. Southern Foods Group, LLC d/b/a Oak Farms Dairy, In the County Court at Law No. 4, Dallas County, Texas, No. CC-12-06727-D, Deposition: 5-8-13

Daniel Rodriguez vs. HEB Grocery Company, L.P., In the District Court of Cameron County, Texas, 444th Judicial District, No. 2012-DCL-3068-H, Deposition: 8-22-13

Blanca M. Gonzalez, et al. vs. Lone Star Temp Services, Inc., et al., In the District Court of Harris County, Texas, 164th Judicial District, No. 2010-62821, Deposition: 9-9-13

Cassandra Cullen vs. Sunbeam Products, Inc., et al., In the United States Court for the Southern District of Texas, Houston Division, No. 4:13-cv-00819, Deposition: 9-12-13

Michael Ludford, et al. vs. KCR Energy, LLC, In the District Court of Young County, Texas, 90th Judicial District, No. 31573, Deposition: 10-4-13

Jonathan Martin Haro vs. LMD Ventures, Inc., et al, In the District Court of Bexar County, Texas, 408th Judicial District, No. 2012-CI-18790, Deposition: 11-14-13

Ilene Corr, et al. vs. Premiere Cinema Corp, et al., In the District Court of Galveston County, Texas, 405th Judicial District, No. 13-CV-0431, Deposition: 11-18-13

Patricia Shooter, et al. vs. Hospital Housekeeping Systems, et al., In the District Court of Dallas County, Texas, 193rd Judicial District, No. DC-12-04928, Deposition: 11-21-13

James M. Smith vs. Boubon Heat, LLC, Civil District for the Parish of Orleans, State of Louisiana, Division "E", Section (7), No. 2011-0782, Trial: 12-3-13

Thomas R. Louwerse vs. Stellar Oilfield Rentals, LLC, In the District Court of Orange County, Texas, 163rd Judicial District, No. B100689-C, Deposition: 12-11-13

Javier Lopez vs. Wildcat Cranes, Inc., In the District Court of Tarrant County, Texas, 48th Judicial District, No. 048-258518-12, Deposition: 12-16-13

Teresa C. Brende, et al. vs. Brookshire Grocery Company, In the District Court of Johnson County, Texas, 249th Judicial District, No. C201100546, Deposition: 12-17-13

Jean Crawford vs. Don A. Stewart, Inc., et al., In the District Court of Bastrop County, Texas, 335th Judicial District, No. 28,781, Deposition: 1-13-14

Updated through January 14, 2014

**In accordance with Rule 26(a)(2)(B)(vi) - Statement of compensation to be paid
for the study and testimony in the case.**

See "Fee Schedule" immediately following this page.

ENGLISH ENGINEERING INC.

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JASON T. ENGLISH, M.S., CSP, P.E. FEE SCHEDULE

Receipt of case materials or requests for work from client after receiving this fee schedule will indicate client's acceptance of its terms.

Basic corporate rate for Professional Engineering Services is \$285.00 per hour (plus expenses).

Basic rate is charged for all professional services provided including: general consultation, inspections, standard and literature search and review, product evaluation, accident cause analysis, lab or field testing, document review, expert deposition or trial testimony, court attendance and consultation during trial, and required travel time.

A **non-refundable retainer of \$1000.00** is required to engage my services on forensic matters where I will be disclosed as an expert witness. The retainer will be **fully applied to future billing**. No one is authorized to disclose or designate me as an expert witness without my permission, and until the retainer is paid in full.

BILLING POLICIES

BILLING STATEMENTS are due within 30 days. Accounts that age more than 30 days beyond the billing date are considered non-current. **Any unpaid balance is subject to interest at a rate of 12 percent per annum, with a 60 day grace period from date of original invoice/statement.** I reserve the right to stop work on any account (and all accounts for the same client) for non-payment of services.

CLIENT IS RESPONSIBLE FOR PAYMENT OF ALL FEES: When clients make agreements with third parties (including other attorneys, insurance companies, their clients, etc.) regarding payment of certain fees, **terms must be payment in advance** from such third parties. Payments not received in advance must be paid by client under payment terms stated herein whereupon clients may then seek reimbursement from such third parties at their own discretion. **No direct billing of third parties will be made.**

REPORTS AND DEPOSITIONS: Accounts **must be brought current prior to** the preparation of **technical reports** and the **scheduling of expert witness deposition testimony**.

POTENTIAL TRIAL TESTIMONY: Should trial appearances be requested, **account balance, one-day (8-hours) minimum for trial attendance, plus estimated time and expense for travel must be paid in advance.**

RESPONSES TO MOTIONS TO EXCLUDE OR STRIKE TESTIMONY: **The preparation of an affidavit response** to a Daubert motion to strike or exclude my testimony **will be done at no charge.**

TRANSPORTATION EXPENSES: Every attempt is made to minimize travel time and expense. Use of personal auto is charged at standard IRS mileage rate. Commercial air travel is charged at cost. Special note: Regardless of the required airport pre-flight arrival time for passenger screening, and potential long flight connection times, only actual flight time plus a maximum 1 hour for required airport pre-flight arrival time and 1 hour for each flight connection will be charged. No further charges will be made for longer flight connection times or flight delays.

MISCELLANEOUS EXPENSES: Other miscellaneous expenses to include special mailing or shipping expenses, required copy services, exhibit production expenses, special photographic/video supplies and reproductions, use of required test equipment, and other requested expendable supplies are charged at cost.

When scheduled deposition or trial dates are cancelled less than 2 working days before the requested time of appearance, any time spent in preparation for anticipated testimony (before notification was received) will be charged.

Expedited Service Charge: A 25% surcharge will be assigned (a) when requests for work are received less than 3 weeks prior to a required deadline date, and (b) when case materials are received for review less than 3 weeks prior to a deadline report/affidavit, a scheduled deposition date, or date of scheduled trial testimony. A 50% surcharge will be assigned in the prior stated circumstances if time is less than 1 week.

Weekend work: A 25% surcharge will be assigned to work hours scheduled by clients on weekends (excluding necessary return or arrival travel to or from scheduled weekday work locations).

Additional policies may apply for situations not anticipated by this fee schedule. Fees are subject to reasonable periodic change.

Tax ID number is 26-4258520.